UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,737	05/04/2001	Qian Huang	8828-053-999	8082

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EXAMINER
DESTA, ELIAS

ART UNIT	PAPER NUMBER
2857	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 November 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-16* is/are allowed.

6)☒ Claim(s) *17-23 and 25* is/are rejected.

7)☒ Claim(s) *24 and 26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 May 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Detailed Action

Explanation of rejection

Claim rejection – 35 U.S.C. 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection

Act of 1999 (AIPA) do not apply to the examination of this application as the

application being examined was not (1) filed on or after November 29, 2000, or (2)

voluntarily published under 35 U.S.C. 122(b). Therefore, this application is

examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35

U.S.C. 102(e)).

2.   *Claims 17-23 and 25* are rejected under 35 U.S.C. 102(e) as anticipated by

Beigi et al. (U.S. Patent 6,246,982).

        In reference to claims 17: Beigi et al. teaches a computer for content-based

searching of stored data (see *Beigi et al.*, column 1, lines 5-11). The method includes

the steps of:

➢ Collecting audio data (or physical attributes data) (see Beigi et al., column 6, lines 32-49).

➢ Identifying collections in the audio data (stored audio data) (see *Beigi et al.*, column 1, line 12-16);

➢ Developing a probability distribution function for each of the audio segments from data points within each of the segments (see *Beigi et al.*, column 1, lines 53-63);

➢ Developing distance measure between a probability density function of a chosen data segment and probability distribution function for the audio sample segments (see *Beigi et al.*, column 1, lines 53-56);

➢ Applying a threshold to the developed distance measure to identify segments with distance measure relative to the chosen data segment (see *Beigi et al.*, column 7, lines 8-11) that is below a pre-selected threshold value where the distance is directly computed according to a measure that guarantees to satisfy the non-negative-ness (see *Beigi et al.*, column 5, equation 1, distance measure carried out in absolute value), symmetry (see *Beigi et al.*, column 5, equation 2 guarantees that a transpose metrics provide a symmetry property hence no transpose matrix can be carried out without the symmetrical property), and triangular inequality properties of a distance measure (see *Beigi et*

al., column 5, lines 9-11, Euclidian distance measurement guarantees triangular inequality).

With regard to claim 18: as noted above in claim 17, *Beigi et al.* further teaches that the acquired collection is an acquired from the stored (collected) data received by the computer (see *Beigi et al.*, column 1, lines 47-53 and column 2, lines 55-61).

With regard to claim 19: as noted above in claim 17, *Beigi et al.* further teaches that the stored data is audio data (see *Beigi et al.*, column 1, lines 47-63, applicant's invention provides audio signal processing within audio-video signal, no video signal or spectrum of colors are processed).

With regard to claim 20: as noted above in claim 17, *Beigi et al.* further teaches that the stored data includes collections that carry speeches of a speaker (see *Beigi et al.*, column 1, lines 5-11).

With regard to claim 21: as noted above in claim 20, *Beigi et al.* further teaches that the speaker characterizes the segment where the speaker influences (pre-dominates) an audio signal associated with the segment (see *Beigi et al.*, column 6, lines 43-48).

With regard to claim 22: as noted above in claim 20, *Beigi et al.* further teaches that the chosen segment carries a speech of a particular speaker (see *Beigi et al.*, column 6, lines 44-46)

With regard to claim 23: as noted above in claim 17, *Beigi et al.* teaches an audio signal processing; however, it does not say that the data is extracted from a television program. Nevertheless, the idea of the invention is claiming an audio signal-processing scheme and it is inherent to show that the speaker or the speech extracted for further test of collection or model can come from a television or video signal because a video or television signal consists of a separate audio signal track.

In reference to claim 25: as noted above in claim 24, *Beigi et al.* further teaches that the method executed in a computer includes the steps of:

> Identifying speaker segments in audio data based on speech contained in the data (see *Beigi et al.*, column 1, line 12-16);

> Developing a probability distribution function for each of the segments from data points within each of the segments (see *Beigi et al.*, column 1, lines 53-56); and

> Developing distance measures among the probability distribution functions, where each of the measures is obtained through one-pass evaluation of a function that guarantees the non-negative-ness (see *Beigi et al.*, column 5, equation 1, distance measure carried out in absolute value), symmetry (see *Beigi et al.*, column 5, equation 2 guarantees that a transpose metrics provide a symmetry property hence no transpose matrix can be carried out without the symmetrical property), and triangular inequality properties of a distance measure

(see *Beigi et al.*, column 5, lines 9-11, Euclidian distance measurement

guarantees triangular inequality).

Allowable Subject Matter

3.   *Claims 24 and 26* are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Allowance

4.   *Claims 1-16* are allowed. The following is an examiner's statement of reasons

for allowance:

In reference to claims 1, 5, 9 and 13: *Beigi et al.* teaches a method of

computing a distance measure between multiple mixtures type probability

distribution functions (see *Beigi et al.*, Figs. 1-3 and Abstract). The method includes

the steps of evaluating a joint distribution function (see *Beigi et al.*, Figs. 4A and

4B, and column 2, lines 32-37). As the sum value of μ_I and γ_k over the range of I=1 to

N and k=1 to K equate to a value one is simply showing that the outcome of the sum

of probability of events is always one.

However, Beigi et al. does not teach that the weight factor, ω_{ik}s are related to

distribution whose values are much smaller. Further, the sum of the weight factors

noted above over the variable "i" is equal to the mean distance. Hence, the method

of the distance computation in the claimed invention is expressed as:

$$D_M (G, H) = \frac{\min}{w = [\omega ik]} \sum_{i=1}^{N} \sum_{k=1}^{K} \omega ik * d(gi, hk).$$

The remaining *claims* are dependent upon *claims 1, 5, 9 and 13* and contain further limitations.

Response to Argument

5. Applicant's arguments, see amendment, filed on November 24, 2004, with respect to claims 1, 5, 9, 13 and 17 have been fully considered and are persuasive. The rejection of claims 1-16 has been withdrawn. Further, the 35 U.S.C. 101 rejections with respect to claims 17 and 18 have been withdrawn, but the 35 U.S.C. 102 rejections with respect to claims 17-23 and 25 are still remain.

Conclusion

6. <u>Citation of pertinent prior art</u>:

> *Chen et al.* (U.S. Patent 6,591,235) teaches high dimensional data mining and visualization via Gaussian method.

> *Erdogan et al.* (U.S. Patent 6,567,771) teaches weighted pair-wise scatter to improve linear discriminator analysis.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax

phone numbers for the organization where this application or proceeding is

assigned are (703)-872-9306 for regular communications and After Final

communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (571)-

272-1750.

                                        Elias Desta
                                        Examiner
                                        Art Unit 2857

-ed

February 17, 2005